

IGNITION SYSTEM - NIPPONDENSO ELECTRONIC

1986 Isuzu Trooper II

Distributors & Ignition Systems
NIPPONDENSO ELECTRONIC IGNITION

Isuzu I-Mark, Impulse, P'UP, Trooper II

DESCRIPTION

The Nippondenso electronic ignition system consists of a breakerless distributor, an ignition module, a pick-up coil, ignition coil, and related wiring. Distributor contains a reluctor, breaker plate, and pick-up coil assembly.

Isuzu Impulse uses I-TEC computerized engine control system. The I-TEC system uses a computer to control ignition timing. All other models contain conventional centrifugal and vacuum advance mechanisms.

NOTE: See ISUZU I-TEC CONTROL SYSTEM in COMPUTERIZED ENGINE CONTROLS section to test Isuzu Impulse ignition system. Distributor is not serviceable and must be replaced as an assembly.

OPERATION

On I-TEC system, the Electronic Control Unit (ECU) is pre-programmed with data for optimum ignition timing under any engine operating condition. Using data from engine sensors (RPM, engine temperature, etc.), the ECU triggers ignition system to provide a spark at precisely the right instant.

On all other models, as distributor shaft turns reluctor, reluctor teeth (one for each cylinder) pass magnetic pick-up coil assembly. As air gap changes with approach and pass of each reluctor tooth, magnetic field varies creating a signal in pick-up coil assembly.

Ignition module senses this signal and turns ignition coil primary circuit on and off. This causes magnetic field in coil primary winding to collapse, resulting in a voltage surge in secondary winding, which fires spark plugs.

ADJUSTMENTS

AIR GAP

I-Mark

1) Using a flat, non-magnetic feeler gauge, check air gap between pick-up coil and reluctor. Air gap should be within .008-.016" (.20-.40 mm).

2) If air gap is incorrect, partially disassemble distributor and loosen screw attaching pick-up coil. Clean pick-up coil screw and coil attaching area with solvent. Apply locking compound to pick-up coil attaching screw.

3) Temporarily tighten pick-up coil screw to area between breaker plate assembly hole and pick-up coil hole. Move pick-up coil to adjust air gap to specification. Tighten pick-up coil screw and assemble distributor.

NOTE: On I-Mark, the pick-up coil assembly and reluctor retaining spring must be replaced whenever air gap is adjusted.

Isuzu P'UP & Trooper II

Using a flat, non-magnetic feeler gauge, check air gap between pick-up coil and reluctor. On P'UP 1.9L engine, air gap should be .008-.016" (.20-.40 mm). On 2.3L engine, air gap should be .012-.020" (.30-.50 mm). If air gap is incorrect, loosen screws and adjust air gap.

IGNITION COIL RESISTANCE TESTS

Primary Coil Resistance

Isolate coil from remainder of system. Measure resistance between coil positive and negative terminals. See IGNITION COIL RESISTANCE table.

Secondary Coil Resistance

Isolate coil from remainder of system. Measure resistance between coil positive terminal and to coil tower. See IGNITION COIL RESISTANCE table.

Coil Insulation Resistance

Isolate coil from remainder of system. Measure resistance between ignition coil positive terminal and distributor housing. Reading should exceed 10 megaohms (infinity).

IGNITION COIL RESISTANCE - OHMS

Application	Primary Resistance	Secondary Resistance
I-Mark	1.2-1.5	10,200-13,800
P'UP		
1.9L Engine	1.1-1.5	10,200-13,800
2.3L Engine	1.1-1.4	8600-13,000
Trooper II	1.1-1.4	8600-13,000

IGNITION WIRE RESISTANCE TEST

I-Mark

Measure spark plug wire resistance. On I-Mark and Spectrum, see IGNITION WIRE RESISTANCE table. On Isuzu P'UP and Trooper II, ignition wire resistance should be 9600-22,600 ohms per 3 feet. On Toyota, ignition wire resistance should be less than 25,000 ohms per cord.

IGNITION WIRE RESISTANCE - OHMS

Application	Resistance
No. 1 Spark Plug Wire	6440-15,030
No. 2 Spark Plug Wire	5290-12,340
No. 3 Spark Plug Wire	4810-11,220
No. 4 Spark Plug Wire	3350-7820

PICK-UP COIL RESISTANCE TEST

I-Mark

Turn ignition off. Remove distributor cap and cover. Measure pick-up coil resistance across terminals. Resistance should be 140-180 ohms. If not, replace pick-up coil.

IGNITION MODULE TEST

Isuzu P'UP (With 1.9L Engine)

1) Remove distributor cap and ignition module cover.

Disconnect ignition coil wire from distributor tower. Hold wire about 1/4" away from distributor coil mounting screw.

2) Set ohmmeter to "x1" scale. Connect ohmmeter positive lead to White wire terminal and negative lead to Red wire terminal. Remove one ohmmeter lead and check for spark at ignition coil wire. If no spark occurs, ignition module is defective.

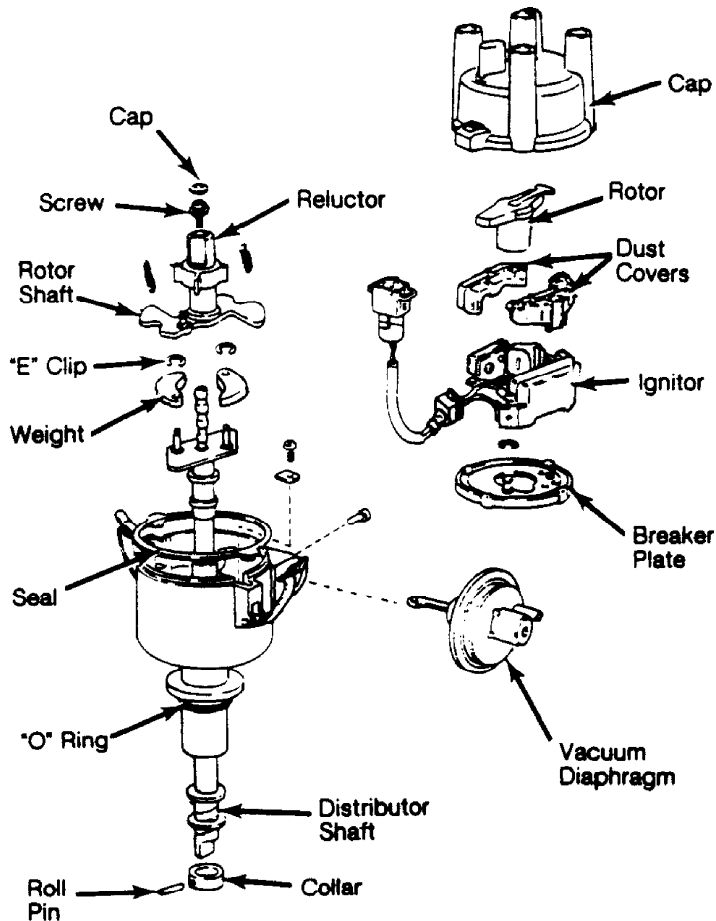
NOTE: Do not connect ohmmeter for more than 3 seconds as ignition module may be damaged.

OVERHAUL

DISASSEMBLY

NOTE: Disassembly information not available from manufacturer.

REASSEMBLY



34250
Fig. 1: Exploded View of Isuzu Distributor
Courtesy of Isuzu Motor Co.

Isuzu P'UP (1.9L Engine)

NOTE: Attach weight to distributor shaft by aligning "10" with stopper. Select a distributor shaft cap that will give a housing-to-collar clearance of .006-.020" (.15-.50 mm). Stake collar roll pin into place.

DISTRIBUTOR SHAFT CAP

Part No.	Thickness In. (mm)
8-94223922-0114 (2.9)
8-94223921-0106 (2.7)
8-94206156-0098 (2.5)
8-94110-977-0091 (2.3)